

Amendments to the Claims

1. (Original) An isolated nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced.

4B14 2. (Original) A nucleic acid as claimed in claim 1 which is capable of delaying the flowering time and thereby extending a vegetative phase in the plant.

3. (Currently Amended) A nucleic acid as claimed in claim 1 which comprises an FRI nucleotide sequence which encodes the polypeptide of Fig. 6 (SEQ ID NO:1).

4. (Currently Amended) A nucleic acid as claimed in claim 3 wherein the FRI nucleotide sequence consists of any of:

(I) the sequence of Fig 4 (SEQ ID NO:2);

(ii) the sequence of Fig 5 (SEQ ID NO:3);

(iii) bases 362-2188 inclusive of Fig 5 (SEQ ID NO:3);

or is degeneratively equivalent to any of these.

5. (Previously Amended under Article 34) An isolated nucleic acid which comprises a variant sequence which is a homologous variant of the FRI nucleotide sequence of claim 4 and which shares at least about 60% identity therewith, said nucleic acid being capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced.

6. (Original) A nucleic acid as claimed in claim 5 wherein the variant sequence encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced.

7. (Previously Amended) A nucleic acid as claimed in claim 5

wherein the variant sequence is an FRI allele.

8. (Previously Amended) A nucleic acid as claimed in claim 5 wherein the variant sequence is an FRI orthologue obtainable from a plant species other than *Arabidopsis thaliana*.

9. (Currently Amended) A nucleic acid as claimed in claim 5 wherein the variant sequence is a derivative of the FRI nucleotide sequence selected from the group consisting of any of:

(I) the sequence of Fig 4 (SEQ ID NO:2);

(ii) the sequence of Fig 5 (SEQ ID NO:3);

(iii) bases 362-2188 inclusive of Fig 5 (SEQ ID NO:3);

or is degeneratively equivalent to any of these. by way of one or more of addition, insertion, deletion or substitution of the FRI nucleotide sequence by way of one or more of addition, insertion, deletion, or substitution of the FRI nucleotide sequence.

10. (Previously Amended) An isolated nucleic acid which comprises a sequence which the complement of the FRI or variant nucleotide sequence of claim 1.

11. (Original) An isolated nucleic acid for use as a probe or primer, said nucleic acid having a sequence of at least about 16-24 nucleotides in length, which sequence is present in either the FRI nucleotide sequence of claim 4 or the complement thereof.

12. (Currently Amended) A process for producing a nucleic acid as claimed in claim 9 which process comprises the step of modifying a FRI nucleotide sequence selected from the group consisting of any of:

(I) the sequence of Fig 4 (SEQ ID NO:2);

(ii) the sequence of Fig 5 (SEQ ID NO:3);

(iii) bases 362-2188 inclusive of Fig 5 (SEQ ID NO:3);
or is degeneratively equivalent to any of these by way of one
or more of addition, insertion, deletion or substitution of
the FRI nucleotide sequence.

13. (Previously Amended) A method for identifying or cloning
a nucleic acid obtainable from the FRI locus of a plant, which
nucleic acid encodes a polypeptide which is capable of
specifically altering the flowering time of a plant into which
the nucleic acid is introduced, which method employs a probe
or primer of claim 11.

14. (Previously Amended) A method for determining the
presence of a nucleic acid obtainable from the FRI locus of a
plant, which nucleic acid encodes a polypeptide which is
capable of specifically altering the flowering time of a plant
into which the nucleic acid is introduced within the genetic
context of a plant, which method employs a probe or primer of
claim 11.

15. (Currently Amended) A method as claimed in claim 14,
which method comprises the steps of:

(a) providing a preparation of nucleic acid from a plant cell;
(b) providing a nucleic acid molecule which is a probe or
primer, said nucleic acid having a sequence of at least about
16-24 nucleotides in length, which sequence is present in
either the FRI nucleotide sequence or a complement thereof and
selected from the group consisting of any of:

(I) the sequence of Fig 4 (SEQ ID NO:2);

(ii) the sequence of Fig 5 (SEQ ID NO:3);

(iii) bases 362-2188 inclusive of Fig 5 (SEQ ID NO:3);

or is degeneratively equivalent to any of these,

©) contacting nucleic acid in said preparation with said
nucleic acid molecule under conditions for hybridisation, and,

(d) identifying a nucleic acid variant if present by its

hybridisation with said nucleic acid molecule.

16. (Currently Amended) A method as claimed in claim 14, which method comprises the steps of:

(a) providing a preparation of nucleic acid from a plant cell;
(b) providing a pair of nucleic acid molecule primers suitable for PCR, at least one of said primers being a primer, said primer having a sequence of at least about 16-24 nucleotides in length, which sequence is present in either the FRI nucleotide sequence or a complement thereof and selected from the group consisting of any of:

(i) the sequence of Fig 4 (SEQ ID NO:2);

(ii) the sequence of Fig 5 (SEQ ID NO:3);

(iii) bases 362-2188 inclusive of Fig 5 (SEQ ID NO:3);

or is degeneratively equivalent to any of these

(c) contacting nucleic acid in said preparation with said primers under conditions for performance of PCR,

(d) performing PCR and determining the presence or absence of an amplified PCR product.

17. (Original) A method of selecting a plant having a desired allele of the FRI gene, which method employs a probe or primer of claim 11 as a marker.

18. (Previously Amended) A recombinant vector which comprises the nucleic acid of claim 1.

19. (Previously Amended) A vector as claimed in claim 18 wherein the nucleic acid comprised in the vector is further capable of modulating VRN2 and/or FLC expression in a plant in which the nucleic acid is transcribed.

20. (Previously Amended) A vector as claimed in claim 18 wherein the nucleic acid is operably linked to a promoter for transcription in a host cell, wherein the promoter is

optionally an inducible promoter.

21. (Previously Amended) A vector as claimed in claim 18 which is a plant vector.
22. (Previously Amended) A method which comprises the step of introducing the vector of claim 18 into a host cell, and optionally causing or allowing recombination between the vector and the host cell genome such as to transform the host cell.

23. (Previously Amended) A host cell containing or transformed with a heterologous nucleic acid of claim 1.
24. (Original) A host cell as claimed in claim 23 which is a plant cell, optionally present in a plant.

25. (Original) A method for producing a transgenic plant, which method comprises the steps of:
- (a) performing a method as claimed in claim 22,
 - (b) regenerating a plant from the transformed plant cell.

26. (Previously Amended) A transgenic plant which is obtainable by the method of claim 25, or which is a clone, or selfed or hybrid progeny or other descendant of said transgenic plant, which in each case includes the plant cell containing or transformed with a heterologous nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced.

27. (Previously Amended) A plant as claimed in claim 26 which is selected from the group consisting of: sugar beet; a Brassica such as cauliflower, broccoli, cabbage, spinach,

curly kale, *B. Napus*; potato; lettuce; a culinary herb.

28. (Previously Amended) A part of propagule from a plant as claimed in claim 26.

29. (Previously Amended) An isolated polypeptide which is encoded by the FRI nucleotide sequence of claim 1.

30. (Currently Amended) A polypeptide as claimed in claim 29 which comprises an amino acid sequence which consists of the sequence of Fig 6 (SEQ ID NO:1).

31. (Currently Amended) A polypeptide as claimed in claim 29 which is a fragment of the polypeptide in Figure 6 (SEQ ID NO:1).

32. (Previously Amended) A method of making the polypeptide of claim 29, which method comprises the step of causing or allowing expression from a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced in a suitable host cell.

33. (Original) An antibody having specific binding affinity for the polypeptide of claim 30.

34. (Previously Amended) A polypeptide which comprises the antigen-binding site of the antibody of claim 33.

35. (Previously Amended) A method for influencing or affecting flowering time in a plant, which method comprises the step of causing or allowing expression of a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically

altering the flowering time of a plant into which the nucleic acid is introduced within the cells of the plant, following an earlier step of introducing the nucleic acid into a cell of the plant or an ancestor thereof.

36. (Currently Amended) A method as claimed in claim 35 for delaying flowering time in a plant, wherein the nucleic acid which comprises an FRI nucleotide sequence which encodes the polypeptide of Fig. 6 (SEQ ID NO:1).

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37. (Previously Amended) A method as claimed in claim 35 for accelerating flowering time in a plant, which method comprises any of the following steps of:

(I) causing or allowing transcription from a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced in the plant such as to reduce FRI expression by an antisense mechanism;

(ii) causing or allowing transcription from a nucleic acid which is capable of delaying the flowering time and thereby extending a vegetative phase in the plant or a part thereof such as to reduce FRI expression by co-suppression;

(iii) use of nucleic acid encoding a ribozyme specific for a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced.

38. (Original) A method as claimed in claim 37 wherein the plant is a soft fruit or maize.

39. (Previously Amended) A method as claimed in claim 35 which further comprises use of a nucleic acid capable of modulating VRN2 expression or FLC expression.

40. (Original) An isolated nucleic acid molecule which comprises a nucleotide sequence which encodes the promoter sequence obtainable from the FRI locus of a plant, or a derivative of said sequence.

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